

Saidur Rahman

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EDUCATION

Montana State University

Ph.D. in Computer Science GPA: 3.85/4.0

Bozeman, MT, USA

Expected Graduation: December 2022

Montana State University

MS in Computer Science GPA: 3.85/4.0

Bozeman, MT, USA

Expected Graduation: December 2021

University of Dhaka

BS in Computer Science & Eng. GPA: 3.55/4.0

Dhaka, Bangladesh

Graduated: June 2016

SKILLS

- **Programming Languages:** Python (4 years), C/C++ (4 years), Java, Javascript, NodeJS, React-Native, Bash, PHP, HTML/CSS, R, C#
- **Language:** Bangla (Fluent: Speaking, Writing, Reading), English (Fluent: Speaking, Writing, Reading), Hindi (Listening)
- **Databases & Other Technologies:** Redis, Google Cloud PubSub, Firebase, MongoDB, PostgreSQL, RethinkDB, Realm, MySQL, SQLite, Cross Platform (Mac, Linux, Windows), Multi-Processing, Multi-Threading, Parallel Computation, System Design, API & Bash, Containerization, Virtualization, Mininet (SDN), Docker, Kubernetes, CRIU, Microservices, Amazon AWS (Lambda, EC2, SQS, S3, Greengrass, IoT), OpenGL, OpenCV
- **Achievement:** NSDI 2020 Student Travel Grant, BD-Sweden Trust Higher Study Travel Grant 2019, Finalist Startup-DU among 40 teams

RESEARCH

- **Ph.D. Topic:** Developing Edge Micro-service framework MicroLambda to partition offloaded computation tasks via dynamic checkpointing over multiple invocations that fit within capped runtimes. Also developing scheduling mechanisms for MicroLambda that provides infrastructure support to different Real time and non Real time applications (Video Streaming, Machine Learning & Mixed Reality Application) based on their QoE requirements over 5G (slicing) low latency networks.
- **Interest:** Distributed Edge Computing, Realtime Machine Learning-Edge Infrastructure, Realtime Mixed Reality-Edge Infrastructure, Edge-5G Scheduling, Microservice-Lambda Edge

EXPERIENCE

Montana State University

Graduate Research Assistant

Bozeman, MT

Aug 2019 - Present

- Developing MicroLambda framework (Edge based Microservice) that provides infrastructure support for AMELIA team for Machine learning applications such as extracting features and predicting stress, arousal, valence from human physiological signal in Real-time. Based on the result, the speed of the industrial robot will be controlled and Unity based hololens 2 MR applications will provide support to reduce the stress of the workers. Also providing support for data storage and communication pipeline for Lambda Invocation, efficiency physiological signal data storaton, publish-subscribe for computation output. | [link](#)

Unstable Slope Management Program

Web and Mobile Application Developer

Remote

Aug 2018 – Present

- Developing Web and Mobile application for “USMP project (Unstable Slope Management Program)” using React-Native (MobileApp) and PHP-Javascript. The objective is to manage information about slopes such as rockfalls, landslides etc in online and offline. The users of the application are Federal Land Management Agencies and Tribes, National Park Service, Federal Highway Partners, Bureau of Land Management etc. | [link](#)

Samsung Research & Development

Software Engineer

Dhaka, Bangladesh

Sep 2016 – Dec 2016

- Developed stitch engine for 360 panorama pictures and videos for Samsung Gear 360 device. We also worked on iOS applications to connect with Gear 360. | [link](#)

PROJECTS

Augmented Learning Innovation | AMELIA | Funded by National Science Foundation Aug 2019 - Present

- Developing cognitive states between human-robot for dangerous situation using Realtime Machine Learning, Mixed reality application and human physiological signal data deployed on Edge. | [link](#)

Unstable Slope Management Program | Funded by Federal Highway Partners Aug 2018 - Present

- Developing application for NPS, FLMAs, FHA geologists using React-Native (Mobile App: iOS & Android) and PHP-Javascript. | [link](#)

Innovation for Autistic Children(HCI project)

June 2015 – December 2015

- Built puzzle games with attractive graphics and animations using Kinetics & C# to teach autistic children about Bangladeshi culture. | [link](#)

CSEDU Image Viewer and Editor-18.4.54

Jul 2012 – Dec 2012

- Developed photo editor using image processing method (such as Noise Detection and Reduction, Edge Detection, Gaussian blur, gray scaling technique, etc.) using C, C++ and OpenCV. | [link](#)

PUBLICATIONS

1. MicroLambda – Packetized Computation for 5G Serverless Edge

2021

Saidur Rahman, Mike P. Wittie, Ahmed Elmokashfi, David Millman, Laura Stanley, Stacy Patterson; Submitted in ACM Symposium on Cloud Computing 2021 (SOCC 21)

2. MicroLambda: Packetized Computation for 5G Mobile Edge Computing

2020

Saidur Rahman, Mike P. Wittie, Ahmed Elmokashfi, Laura Stanley, Stacy Patterson; Published in 3rd USENIX Workshop on Hot Topics in Edge Computing (HotEdge 20)

3. MR-DNS: Multi-Resolution Domain Name System

2019

Saidur Rahman, Mike P. Wittie; Published in International Conference on Internet and Distributed Computing Systems

4. Internet Data Budget Allocation Policies for Diverse Smartphone Applications

2016

Saidur Rahman, Anika Anzum Prima, Md. Abdur Razzaque, Mohammad Mehedi Hassan, Abdul hameed Alelaiwi, Majed Alrubaiian, Kim-Kwang Raymond Choo; Published in EURASIP Journal on Wireless Communications and Networking (Impact: 2.407)

5. Optimal allocation of 3G budget for smartphones running heterogeneous applications

2016

Saidur Rahman, Anika Anzum Prima, Md. Abdur Razzaque; Published in International Conference on Networking Systems and Security

INTEREST

Photography ([link](#)), Gardening, Soccer